

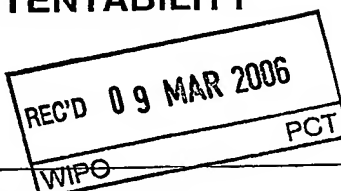
PATENT COOPERATION TREATY


PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference P/63937.WO1/GPTX18		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/053042		International filing date (day/month/year) 22.11.2004		Priority date (day/month/year) 03.12.2003
International Patent Classification (IPC) or national classification and IPC H04B10/17				
Applicant MARCONI COMMUNICATIONS SPA				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 23.09.2005		Date of completion of this report 08.03.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Shaalan, M Telephone No. +49 89 2399-7723		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/053042

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-11 as originally filed

Claims, Numbers

1-9 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/053042

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-9
	No: Claims	1
Inventive step (IS)	Yes: Claims	3-9
	No: Claims	1-2
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The document D4 was not cited in the international search report. A copy of the document is appended hereto.

D1: US-B1-6 421 168 (DUERKSEN GARY ET AL) 16 July 2002 (2002-07-16)

D2: HARUO OKAMURA: "AUTOMATIC OPTICAL LOSS COMPENSATION WITH ERBIUM-DOPED FIBER AMPLIFIER" JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, vol. 10, no. 8, 1 August 1992 (1992-08-01), pages 1110-1116, XP000288348 ISSN: 0733-8724

D3: US-B1-6 175 436 (JACKEL JANET L) 16 January 2001 (2001-01-16)

D4: Saleheen: "CLOSED CYCLE LASING OF ASE NOISE IN A WDM RING NETWORK, Lasers and Electro-Optics, 2001, CLEO/Pacific Rim 2001, The 4th Pacific Rim Conference on, Volume 2, pp. II-558-II-559, ISBN 0-7803-6738-3

- 2 Document D4, see in particular the passages cited in the search report, discloses as in claim 1 (The references in parenthesis apply to the figures of D4):

A wavelength division multiplex optical ring network comprising optical fibre (figure 1) arranged in a ring configuration and a plurality of doped fibre optical amplifiers (EDFA) arranged in the ring, in which the spectral response in the ring is configured such that in use amplified spontaneous emission (ASE) noise circulates around the ring in a lasing mode(section 2., last sentence) to clamp the gain of each doped fibre optical amplifier (figure 3 and section 3. Results); characterised in that each optical amplifier includes respective control means (implicit) which in use control the optical amplifier to produce a substantially constant output power (figures 3 and 4: channel 4 is maintained at constant output power) or to maintain a substantially constant pump power.

Since all the features of claim 1 are known from D4, the claim lacks novelty in the sense of Article 33(1), (2) PCT.

3. The combination of the features of dependent claim 3 is neither known from, nor

rendered obvious by, the available prior art D1-D4 for the following reason:

The document D4 discloses a WDM ring with constant output power control for each channel using feedback control loop, in which gain clamping due to ASE lasing along the ring occurs at a single channel.

Therefore the claim differs from this document in that a loss of ASE lasing peak is detected and in response the optical amplifier is switch to a gain control mode.

The problem to be solved can be reagrded as modifying the network in order to improve its performance in the case, where no ASE lasing is detected.

The above problem is not addressed nor hinted at in D4.

Further, the solution, which is to switch the operation of the amplifiers to a gain control mode before the lasing peak is re-established, is not obvious either, since it requires a different amplifier type.

It is suggested therefore that a new independent claim be drafted to include these features, bearing in mind that the features known in combination from D4 should be placed in the preamble of such a claim in accordance with Rule 6.3(b) PCT.

Dependent claims 4-9 would be allowable with such a revised independent claim.

Re Item VII

Certain defects in the international application

1. To meet the requirements of Rule 5.1(a)(ii) PCT, the document D4 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.
2. If an amended set of claims is filed, then the description has to be adapted accordingly. The applicant is further requested to provide clear indication from where in the original application the amendments were derived, cf. Article 19(2) PCT.